The Effect of Ozone on the Ignition of Hydrocarbons. I. The Ignition of Butane With Oxygen SOV/76-32-10-30/39

Card 4/4

KAMENETSKAYA, S.A.

24(8) p.3 PHASE I BOOK EXPLOITATION SOV/2267

Akademiya nauk SSSR. Energeticheskiy institut

Kinetika i rasprostraneniye plameni; sbornik dokladov na obshchemoskovskom seminare po goreniyu pri energeticheskom institute AN SSSR (Kinetics and Propagation of Flame; Collection of Reports at the All-Moscow Seminar on Combustion) Moscow, Izd-vo AN SSSR, 1959. 51 p. Errata slip inserted. 2,500 copies printed.

Ed.: L. N. Khitrin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A. G. Prudnikov; Tech. Ed.: O. M. Gus'kova; Seminar Council: L. N. Khitrin, Corresponding Member, USSR Academy of Sciences (Chairman), G. F. Knorre, Doctor of Technical Sciences, Honored Worker in Science and Technology, Professor (Deputy Chairman); Ye. S. Shchetnikov, Doctor of Technical Sciences, Professor (Deputy Chairman); A. P. Vanichev, Doctor of Technical Sciences; V. V. Voyevodskiy, Corresponding Member, USSR Academy of Sciences; N. V. Golovanov, Candidate of Chemical Sciences; D. S. Zhuk, Candidate of Chemical Sciences; N. V. Inozemtsev, Doctor of Technical Sciences, Honored Worker in Science and Technical, Professor; B. V. Kantorovich, Doctor of Technical Sciences; S. M. Kogarko, Doctor of Chemical Sciences; B. P. Lebedev, Candidate of Technical Sciences; K. A. Nikitin, Candidate of Technical Sciences; A. S. Sokolik, Doctor of Chemical Sciences; and Ye. S. Golovina, Candidate of Technical Science (Scientific

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Secretary).

PURPOSE: This book is intended for engineers and specialists in thermal power production, gas combustion, heat engineering and related fields.

COVERAGE: The collection contains three articles which deal with the combustion reaction rate and flame velocity in gaseous mixtures and the influence of ozone on the kinetics of hydrocarbon combustion. References appear at the end of each article.

TABLE OF CONTENTS:

Tsukhanova, O. A. Calculation of Total Reaction Rate and Flame Velocity in Gaseous Mixtures 3

The author describes the combustion process with a system of differential equations of the conservation of mass, equations of momentum, energy, state and chemical kinetics. The article is subdivided as follows: Derivation of an approximation formula for normal flame velocity; Derivation of equations for calculating coefficients of total reaction rate; Calculation of total

reaction kinetics for mixtures of carbon monoxide with oxygen and nitrogen; Comparison of experimental data with calculated values of the total reaction rate of carbon monoxide with oxygen; On the conformity of exact and approximate solutions. The following personalities are mentioned: N. N. Semenov, D. A. Frank-Kamenetskiy, Ya.B. Zel'dovich, G. A. Barskiy, A. V. Bondarenko, N. A. Karzhavin, N. A. Karzhavina, L. S. Sclov'yeva, G. I. Kozlov, I. S. Bruk.

Kamentskaya, S. A., N. A. Slavinskaya, and S. Ya. Pshezhetskiy. Influence of Ozone on the Combustion of Hydrocarbons 33

The author investigated the influence of ozone on critical conditions for the combustion of mixtures of some hydrocarbons with oxygen. Butane, Butylene and cyclohexane were investigated as it was possible to assume sustantial distinction in their primary interactions with ozone. The following personalities are mentioned: N. M. Chirkov, S. G. Entelis, A. B. Nalbandyan, B. Ya. Stern, N. A. Kleymanov, I. N. Antonova, A. M. Markevich.

Cherednichenko, V. M., I. N. Pospelova, and S. Ya. Pshezhetskiy, Influence of Ozone on the Burning Velocity of Hydrocarbons. 43

Kinetics and Propagation of Flame (Cont.) SOV/2267

The influence of ozone on the burning velocity of butane was investigated at atmospheric pressure in air mixtures, and in oxygen mixtures at a pressure of 10 mm Hg.

AVAILABLE: Library of Congress

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10-5-59

PSHEZHETSKIY, S.Ya.; KAMENETSKAYA, S.A.; GRIBOVA, Ye.I.; PANKRATOV, A.V.; MOROZOV, N.M.; POSPELOVA, I.N.; APIN, A.Ya.; SIKYATSKAYA, V.N.; SLAVINSKAYA, N.A.; CHERED NICHENKO, V.M.

Kinetics of the decomposition and explosion of ozone.
Probl.fiz.khim. no.2:27-38 '59. (MIRA 13:7)

1. Laboratoriya kinetiki gazovykh reaktsiy Nauchno-issledovatel'skogo fiziko-khimicheskogo instituta im. L.Ya.Karpova.
(Ozone) (Explosions)

The collection is the second issue of the Transactions of the Scientific Research Institute of Physical Chemistry im. L. Ya. Karpov.

5(4), 4(6)

SOV/76-33-1-8/45

AUTHORS: Slavinskaya, N. A., Kamenetskaya, S. A., Pshezhetskiy, S. Ya.

TITLE: The Effect of Ozone on the Ignition of Hydrocarbons (Vliyaniye ozona na vosplameneniye uglevodorodov) II. Ignition of Butylene With Oxygen (II. Vosplameneniye butilena s kislorodom)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 1, pp 45-49 (USSR)

ABSTRACT: The effect of ozone (I) on the location of the ignition point and induction period of the ignition of a butylene (II)-oxygen (III) mixture was investigated and compared with the data regarding butane (Ref 1). (II) was obtained by the dehydration of n-butanol on aluminum oxide at 280-300°C, (I) and (III) as described in reference 1. Investgations were carried out with gas mixtures containing 80% (III) (from the stoichiometric amount) in a heatable vessel. The ignition point of (II) is somewhat lower than that of butane; the same applies to the induction period of the ignition. The data (Fig 2) were calculated from an equation found by N. N. Semenov. The values E = 42.2 kcal or 44 kcal were obtained for the activation energy. The effect of ozone is much stronger upon the ignition of (II) than upon that of butane. At a content of 2.5% (I) the

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The Effect of Ozone on the Ignition of Hydrocarbons. II. Ignition of Butylene With Oxygen

activation energy decreases to E = 8.85 kcal. This difference in the effect of (I) is explained by the primary reaction of (I) or of the atomic (III) with hydrocarbon at the double bonds, but not by the heat emission in the decomposition $O_3 \rightarrow 1.5\ O_2$. The dependence of the temperature on the pressure which was observed near the ignition point agrees with the theory of heat ignition. There are 6 figures, 1 table, and 2 references, 1 of which is Soviet.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva (Physico-Chemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: May 31, 1957

SOV/76-33-2-5/45

5(4), 11(2)

AUTHORS: Slavinskaya, N. A., Kamenetskaya, S. A., Pshezhetskiy, S. Ya.

TITLE: The Effect of Ozone on the Ignition of Hydrocarbons (Vliyaniye ozona na vosplamenenive uglevodorodov). III. The Ignition of Cyclohexane With Oxygen (III. Vosplamenenive tsiklogeksana s kislorodom)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 271 - 275 (USSR)

ABSTRACT: In continuing investigations previously reported (Refs 1,2) the primary reaction of ozone with cyclic hydrocarbons in the ignition of the latter was tested. The scheme used in the tests as well as the method for producing the ozone and oxygen has already been reported (Ref 1). A gas mixture was used which contained only 80% of the stoichiometric amount of oxygen. It was found that an addition of ozone lowered the ignition temperature (Fig 4) and the pressure threshold for ignition (Fig 5), while the induction period for ignition was avoided. Calculations for a gas mixture with 13.2% ozone show (Table 2) that the activation energy

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The Effect of Ozone on the Ignition of Hydrocarbons. III. The Ignition of Cyclohexane With Oxygen

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. lowered by the ozone from 43 kcal to 9.2 kcal. The effect of the ozone on the ignition of cyclohexane is similar to its effect on the ignition of butane, but less than in the case of the butylene ignition. The former is due to a similar primary reaction of butane and cyclohexane with ozone. The results obtained are in accord with the theory of heat ignition of N. N. Semenov and agree with the data obtained by N. A. Kleymenov, I. N. Antonova, A. M. Markevich, and A. B. Nalbandyan (Ref 3). There are 6 figures, 2 tables and 3 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Fiziko-khimicheskiy institut im. L. Ya. Karpova (Academy of Sciences, USSR, Physical-Chemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: May 31, 1957

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SOV/76-33-10-31/45

5(4)
AUTHORS: Pshezhetskiy, S. Ya., Morozov, N. M., Kamenetskaya, S. A., Siryatskaya, V. N., Gribova, Ye. I.

TITLE: Kinetics of the Thermal Decomposition of Ozone

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 10, pp 2306 - 2315 (USSR)

ABSTRACT: According to A. V. Pankratov and S. Ya. Pshezhetskiy (Ref 1), the quantum yield of photochemical ozone decomposition in liquid phase attains a value of 20. Investigations of the kinetics of thermal ozone decomposition have not fully explained this problem. Thus, values of 23-31 kcal were given for the activation energy in various publications. Further investigations of this problem were made by L.S. Kassel' (Ref 2), Benson, and Axworthy (Ref 3). In this article, the authors measured the reaction kinetics of thermal ozone decomposition at small, medium, and high ozone concentrations and various reaction surfaces within a wide temperature range. Experiments were made under static and dynamic conditions (at low concentration). The decomposition rate of ozone was determined at a pressure of 30-760 mm Hg and various initial ozone-hydrogen ratios within

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the temperature range 70-170°. The results of some typical experiments are listed (Tables 1-3). The velocity constant of decomposition, calculated according to the equation of second order, varies in dependence on the ratio $O_2:O_3$ as well as the "actual" activation energy which rises from 18 (95-97% O_3) up to 27 kcal (2-3% O_3). At very high and low ozone concentrations, the equation of second order holds with sufficient approximation. Extension of the reaction surface by 4.7 times does not change the reaction rate (Table 4). The factor before the exponent also varies with the composition of the gas mixture (Table 5). In concentrated mixtures, it is smaller by $10-10^2$ than the number of double collisions, and 10^2-10^4 times greater than the latter in dilute mixtures. An equation for the reaction rate was set up by the method of constant concentration which was suggested by Schumacher and Glissmann (Ref 10). The factors before the exponents and the activation energies were calculated for the four elementary reactions of the process (Table 6). The decomposition of ozone at the surface seems to be heterogeneous and of first order as confirmed by data by Markevich (Refs 6,7). There are 3 figures, 6 tables, and 24 references, 8 of which are Soviet.

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Kinetics of the Thermal Decomposition of Ozone SOV/76-33-10-31/45

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva (Physicochemical Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: March 31, 1958

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05835
SOV/76-33-10-33/45

5(4)

AUTHORS: Slavinskaya, N. A., Kamenetskaya, S. A.

TITLE: The Effect of Ozone on the Critical Conditions of the Ignition Resulting From Contact Between Ethanol and Oxygen

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 10, pp 2325 - 2330 (USSR)

ABSTRACT: The authors investigated the influence exerted by ozone upon the limit and induction period of alcohol ignition by oxygen in a heated vessel. Results were compared with those yielded by hydrocarbons, and the authors attempted to explain the function of the OH-group. The experimental method has already been described (Ref 2). Besides, the ethanol-oxygen mixture was studied, and it was found that the dependence of the critical pressure of ignition of the mixture upon temperature follows the approximation equation (2) of the heat theory of ignition by N. N. Semenov (Ref 5) (this holds also for butane, butylene, and cyclohexane). The induction period of ignition lasts 1-4 sec, and is thus shorter than that of hydrocarbons; furthermore, it follows also the approximation equation (3) by N. N. Semenov. The resultant data are in good agreement with the constant of equa-

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The Effect of Ozone on the Critical Conditions of the Ignition Resulting From Contact Between Ethanol and Oxygen

tion (3) (Table 1). The activation energy resulting from contact between ethanol and oxygen amounts to 62 kcal; hence, it exceeds considerably that resulting from reactions of hydrocarbons with oxygen (44 kcal approximately), which is ascribed to the greater strength of the C-H bond in ethane (as compared with the hydrocarbons of the paraffin series). Data by N. M. Chirkov, S. G. Entelis (Ref 7), Ye. A. Andreyev (Ref 8), H. A. Taylor (Ref 9), and A. V. Zagulin (Ref 10) indicate that the activation energy of ethane amounts to 55-68 kcal. The influence exercised by ozone upon the ignition resulting from the reaction of ethanol with oxygen was investigated by partial substitution of ozone for oxygen. For this purpose, the authors used mixtures with 3-15% by volume of ozone. Temperature, pressure, and induction period of ethanol ignition are greatly reduced by ozone. The actual activation energy is also reduced by it (Table 2), which further explains its effect (as in the case of hydrocarbons). Ozone has a stronger effect on the critical conditions of ethanol ignition than on those of cyclohexane and butane, it is, however, surpassed by the effect of butylene. In conclusion, the authors thank Professor S. Ya. Pshezhetskiy for valuable

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S/076/60/034/05/05/038
B010/B002

AUTHORS: [illegible], S. A., Karpovich, V. Ye., Kanenetskaya, S. A., [illegible], V. V., Semenchenkiy, S. Ya.

TITLE: The Burning Rate of Ozone - Oxygen Gas Mixtures

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 5, pp. 973-976

TEXT: The authors worked to find out whether there is a relationship between the kinetics of the ozone decomposition and the burning rate of ozone. For this purpose, they measured the propagation velocity of the flame in gaseous mixtures of ozone with oxygen in a horizontal glass tube. The photoelectric method served for determining the flame passage, and a suitable device was worked out (Fig. 1). The flame front area was recorded photographically with a movie camera. The results obtained are tabulated, and are compared (Fig. 2) with the results obtained by B. Lewis (Ref. 3) and A. O. Streng and A. V. Grosse (Ref. 4). A good agreement is found among them. Experimental data obtained for the dependence of the burning rate on the gas mixture composition, are in

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good agreement with the values calculated from the Zel'dovich-Frank-Kamenetskiy-Semenov equation (Ref. 7). The calculated absolute values are smaller than the experimental ones. A comparison between data given here and those from Ref. 4 and the paper by T. Karman (Ref. 5) revealed that the burning rate of ozone in oxygen mixtures corresponds to the reaction kinetics of thermal ozone decomposition. N. N. Semenov is mentioned in the text. There are 2 figures, 1 table, and 11 references: 4 Soviet, 6 American, and 1 German.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Institute of Physical Chemistry imeni L. Ya. Karpov)

SUBMITTED: May 25, 1958

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B015/B061

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5.4508

AUTHORS: Slavinskaya, N. A., Kamenetskaya, S. A., Pshezhetskiy, S. Ya., Vasil'yev, L. A. (Moscow)

TITLE: The Influence of Ionizing Radiation on the Kinetics of the Oxidation and Ignition of Butane. I. Formal Kinetics

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 6, pp. 1169-1175

TEXT: The influence of fast electrons and of a static discharge on the formal kinetics of the chain reaction of butane oxidation with oxygen was examined. An electron accelerator was used, and the pressure in the reaction vessel was changed from 582 to 640 torr, and the temperature from 40 to 254°C. The strength of the discharge current was measured with an МВЛ-2М (MVL-2M) cathode voltmeter. It was established that irradiation with fast electrons accelerated the butane oxidation and decreased the induction period and the effective activating energy. The latter falls from 45 to 15 kcal/mole with an increase in the radiation intensity. The effect of radiation on the reaction kinetics is mainly due to the

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81970
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B015/B070

AUTHORS: Gribova, Ye. I., Kamenetskaya, S. A., Pankratov, A. V., Apin, A. Ya., Pshezhetskiy, S. Ya.

TITLE: The Critical Diameter and the Explosion Rate of Liquid Ozone Solutions

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7, pp. 1395-1401

TEXT: According to the theory of Yu. B. Khariton (Ref. 1) the critical diameter of an explosive is the minimum diameter of a cylindrical charge in which a stable detonation at a constant rate may occur. The critical diameter of the explosive is proportional to the duration of the reaction in the front of the explosive wave and this duration is inversely proportional to the reaction rate. In the present work the dependence of the critical diameter on the composition of the liquid ozone sample diluted with oxygen or carbon tetrafluoride is investigated. The experimental apparatus is shown schematically in Fig. 1. The explosion was started by lead azide in a suitable apparatus (Fig. 2), and for experiments with

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The Critical Diameter and the Explosion Rate of Liquid Ozone Solutions

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B015/B070

oxygen - ozone mixtures the gaseous mixture was condensed in a receiver (Fig. 3). The measured values (Table 1, oxygen - ozone mixtures with 37-40% O_3; Table 2, 47% O_3; Table 3, 32-96% O_3; Table 4, experiments in small brass tubes with heterogeneous mixtures; Table 5, CF_4-O_3 mixtures) show that the explosion properties of ozone are determined principally by the character of the kinetics of decomposition, i.e., by the small activation energy and the large factor of the exponential function. The relation obtained between the critical diameter and the composition of the solutions agrees with the above-mentioned theory of the critical diameter of stable detonations. Measurements on the rate of explosion of an ozone - oxygen mixture with 96% ozone (Table 6) showed that the rate of detonation is not proportional to the ozone concentration. A. F. Belyayev is mentioned in the text. There are 5 figures, 6 tables, and 6 Soviet references.

ASSOCIATION: Fiziko-khimicheskiy in-t im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: February 22, 1958

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38429
S/076/62/036/006/003/011
B117/B138

5.4600

AUTHORS: Slavinskaya, N. A., Zhitneva, G. P., Kamenetskaya, S. A., and Pshezhetskiy, S. Ya.

TITLE: Effect of ionizing radiation on the kinetics of butane oxidation. II. Reaction mechanism

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 6, 1962, 1293 - 1298

TEXT: The first section of this report (I) (N. A. Slavinskaya, S. A. Kamenetskaya, S. Ya. Pshezhetskiy, L. A. Vasil'yev, Zh. fiz. khimii, 34, 1169, 1960) dealt with the formal kinetics of chain reactions in butane oxygen oxidation. This section describes studies of the oxidation mechanism of butane under fast electron irradiation with particular attention to its effect on the ramification of the reaction chain. The source was an electron accelerator with extracted beam of three intensities 25, 50, and 100 μa. The electron energy absorbed by the gas was determined from the decomposition of nitrogen oxide: 0.6 at 25 μa, 1.2 at 50 μa, and $2.4 \cdot 10^{15}$ ev/cm^3 at 100 μa. The reaction rate was measured by the method des-

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Effect of ionizing ...

cribed in I. Besides the chromatographic determination of butane, also the products of its partial oxidation (peroxides and aldehydes) were also studied polarographically. Experimental conditions: initial pressure of the butane - air mixture = 613 mm Hg; temperature = 185 - 257°C. The temperature dependence of the reaction rate was recorded at two radiation intensities ($1.2 \cdot 10^{15}$ and $2.4 \cdot 10^{11}$ ev/cm^3.sec). As in I, the main parameters of the reaction kinetics were determined from experimental curves, using the equations suggested by N. I. Semenov (O nekotorykh problemakh khimicheskoy kinetiki (Some problems of chemical kinetics) Izd-vo AN SSSR, 1954) for ramified chain reactions. It was found that the effective activation energy E_{eff} decreased and the number of initial active centers n_o and the ramification factor φ increase as radiation intensity rose. This is consistent with the previously determined dependence of these parameters on the intensity of the electron beam. Accelerated accumulation of peroxides and aldehydes was found with rising intensity of the electron beam. Examination of their concentration as a function of this intensity showed that they decompose under the action of electrons. The amount of decomposing peroxides was proportional to the radiation intensity. The

decomposition of aldehydes is more complicated, and they are assumed to play a less significant part in chain ramification. Summary: The greater ramification of the chain at high radiation intensity cannot only be due to the formation of initial active centers, but also to the radiative decomposition which causes a degenerate ramification. Further research is needed for the problem of whether the decomposition of peroxides and aldehydes is due to direct absorption of radiation energy only, or whether the energy may be transferred their molecules by collision with ions or excited nitrogen molecules. The kinetic phenomena observed are assumed to be related to a direct or indirect effect of radiation on intermediate products. There are 6 figures.

ASSOCIATION: Fiziko-khimicheskiy institut imeni L. Ya. Karpova, Moskva (Physicochemical Scientific Institute imeni L. Ya. Karpov, Moscow)

SUBMITTED: September 13, 1960

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S/844/62/000/000/059/129
D204/D307

AUTHORS: Slavinskaya, N. A., Kamenetskaya, S. A., Pshezhetskiy, S. Ya. and Zhitneva, G. P.

TITLE: A study of the kinetics of the chain oxidation of butane in the vapor phase, under the action of fast electrons

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 353-356

TEXT: Kinetics of the aerial oxidation of gaseous butane were studied under steady irradiation with fast electrons (the energy absorbed by the gas ρ being 0.6, 1.2 or 2.4 x 10^{16} ev/cm^3.sec) at 613 - 640 mm Hg and between 185 and 257°C, to elucidate the mechanism of such reactions. The intermediate oxidation products were estimated polarographically, the unchanged butane chromatographically, and the reaction rate was followed by the increase in pressure, Δp. The log Δp/time plots were linear in all cases, as predicted by the kinetic equations derived for branched-chain mecha-

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nisms by N. N. Semenov. Both the initial number of active centers, n_o, and a parameter characterizing the extent of chain-branching increased linearly with increasing intensity of irradiation, whilst the effective activation energy was decreased. A mathematical treatment is presented, showing that the rates of oxidation of hydrocarbons under constant irradiation may be described by branched-chain kinetic equations, the actual parameters being a function of the irradiation intensity. The relative increase in n_o under the action of irradiation was comparatively lower at higher temperatures. The effect of radiation on chain-branching is ascribed to the action of the irradiation on intermediate oxidation products (aldehydes and peroxides); these products were shown to decompose in proportion to the duration of irradiation. There are 5 figures.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-Chemical Institute im. L. Ya. Karpov)

L 17711-63 EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC Pc-4/Pr-4
RM/WW/JD

ACCESSION NR: AP3004063 S/0076/63/037/007/1549/1556 70 69

AUTHORS: Slavinskaya, N. A.; Gribova, Ye. I.; Demidova, G. G.; Kamenetskaya, S. A.; Piotrovskiy, S. Ya.

TITLE: Effect of ozone on the kinetics of butane oxidation

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 7, 1963, 1549-1556

TOPIC TAGS: ozone, butane, oxygen

ABSTRACT: The effect of ozone on the kinetics of butane oxidation with oxygen has been investigated. In a previous experiment, an investigation was made of the effect of ozone on the critical ignition point of some hydrocarbons. Ozone

resulting from the above decomposition: $C_4H_{10}O_3 \rightarrow C_4H_9O_2H_2O$. Orig. art. has:

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L 17711-63

ACCESSION NR: AP3004065

13 figures, 2 tables and 8 formulas.

ASSOCIATION: Fiziko-khimicheskiy institut im. P. Ya. Karpova (Physicochemical institute)

SUBMITTED: 21Jul62 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 010 OTHER: 004

Card 2/2

MARGULIS, O.M.; KAMENETSKIY, A.B.

Using aluminum phosphate as bonding for refractory corundum products and mortars. Ogneupory 29 no.7:329-332 '64.
(MIRA 18:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

KAMENETSKAYA, S.E.

KAMENTSKAYA, S.E.; KURTTS, L.Yu.

Equipment for checking the centering of cystoscope lenses. Opt.-mekh. prom. 25 no. 2:40-41 F '58. (MIRA 11:7)
(Optical instruments)
(Lenses--Testing)

GENIN, I.; BRUK, S.I., kand.geograf.nauk; KAMENETSKAYA, T.B., red.; CHIZHOV, N.M., red.

Iran. Scale 1:2500000. Moskva, Gos.izd-vo geogr.lit-ry, 1959. col.map fol. ___Genin, I. Iran. 31 p. (MIRA 13:6)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.
(Iran--Maps)

KAMENETSKAYA, T.M.

Electrophoretic studies of blood serum in rheumatic patients receiving compound treatment; ultraviolet irradiation and salicylic preparations. Vop. kur., fizioter. i lech. fiz. kul't. 24 no.6:506-510 N-D '59. (MIRA 15:1)

1. Iz Nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniya RSFSR (dir. - chlen-korrespondent AMN SSSR prof. A.N. Obrosov)
(RHEUMATISM) (SERUM) (ULTRAVIOLET RAYS--THERAPEUTIC USE)
(SALICYLATES--THERAPEUTIC USE)

KAMENETSKAYA, T. M., CAND MED SCI, "SPECTROGRAPHIC AND ELECTROPHORETIC ~~INVESTIGATIONS~~ examinations of the effect OF BLOOD SERUM UNDER ~~ACTION~~ OF ULTRAVIOLET IRRADIATION. (EXPERIMENTAL AND CLINICAL DATA)." MOSCOW, 1961. (MIN OF HEALTH USSR. CENTRAL SCI RES INST OF HEALTH RESORT SCI AND PHYSIOTHERAPY). (KL-DV, 11-61, 228).

КАМЕНЕЦКАЯ, Ц. Ю.

782. THE CLINICAL PICTURE OF INTRACTABLE FORMS OF TRACHOMA (Russian text) - Kamenetskaya Ts. Yu. - SBORN. INFORM.-METOD. MATERIAL. INST. 1956, 4 (109-110)

Cases of persistent trachoma are divisible into 2 groups: mild and severe. In the first group are patients with mild focal infiltration and delicate scars. The severe form of intractable trachoma can in turn be divided into 2 groups: (a) predominantly with involvement of the palpebral conjunctiva; (b) predominantly with involvement of the cornea. When the pathological process is localized to the conjunctiva a varying clinical picture is observed: (1) the development of papilliform excrescences; (2) focal infiltration; (3) diffuse infiltration; (4) a combination of vernal catarrh and trachoma. Aggravation of the trachoma and acute exacerbations were observed against a general background of allergy, deterioration of the general condition and acute infections. (S)

GORGIYEV, T.B.; KAMENETSKAYA, Ye.M.

Autovaccine treatment of chronic recurrent furunculosis. Vrach. delo no.10:147 O '61. (MIRA 14:12)

1. Dnepropetrovskiy institut epidemiologii, mikrobiologii i gigiyeny i Dnepropetrovskoye 11-ye lechebno-poliklinicheskoye ob"yedineniye.
(VACCINATION) (FURUNCLE)

ANDRONOVA, A.V.; KAMENETSKAYA, Z.Ya.

Causes of the passivity of gold alloys during electrolysis.
TSvet. met. 33 no.7:59-61 Jl '60. (MIRA 13:7)
(Gold alloys--Electrometallurgy)

KAISINSKIY, A.

We are studying formally, but in essence [illegible] vol. 22 no.3: 15 Mr '65. (MIRA 18:7)

1. Vneshtatnyy korrespondent zhurnala "[illegible]".

L 19712-63 EPR/EWT(1)/EPF(c)/EPF(n)-2/EWP(q)/EWT(m)/BDS/T-2/ES(v)/ES(n)-2/ES(w)-2 AFFTC/ASD/SSD Ps-4/Pr-4/Pu-4/Pe-4/Pab-4/Pt-4 WW/WH

ACCESSION NR: AP3003205 S/0115/63/000/006/0021/0022

AUTHOR: Margulis, O. M.; Usatikov, I. F.; Kamenetskiy, A. B.; Lakh, V. I.; Stadny*k, B. I.

TITLE: Refractory insulation of thermo-electrodes used in measuring high temperatures

SOURCE: Izmeritel'naya tekhnika, no. 6, 1963, 21-22

TOPIC TAGS: insulation, refractory insulation, high-temperature measurements, VR-5 alloy, VR-15 alloy, VR-20 alloy

ABSTRACT: As porcelain caps and beads slipped over thermocouples withstand only temperatures of up to 1,000-1,500C, other materials — MgO, Al_2O_3, and ZrO_2 — were used for developing refractory insulation for high-temperature thermocouples. Wires from tungsten-rhenium alloys containing 5% (VR-5), 15% (VR-15), and 20% (VR-20) rhenium were annealed at 1,400-1,650C in

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ACCESSION NR: AP3003205

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0.001-torr vacuum and in hydrogen. VR-5/20 and VR-15/20 thermocouples were made from these 0.34-mm wires. The MgO caps and beads were tested separately for five hours in argon at 2,400C; they also worked in induction furnaces at temperatures up to 2,000C without appreciable vaporization or volatilization; however, in 10^{-4}-torr vacuum at temperatures over 1,600C, a "considerable wear was observed." Orig. art. has: no figure, formula, or table.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific-Research Institute of Refractories)

SUBMITTED: 00 DATE ACQ: 22Jul63 ENCL: 00

SUB CODE: IE NO REF SOV: 001 OTHER: 002

Card 2/2

ACCESSION NR: AP4015329 S/0131/64/000/001/0024/0028

AUTHORS: Margulis, O. M.; Usatikov, I. F.; Kamenetskiy, A. B.

TITLE: Refractory materials for the protection of thermoelectrodes used in high-temperature measurements

SOURCE: Ogneupory*, no. 1, 1964, 24-28

TOPIC TAGS: refractory material, zirconium dioxide, magnesium oxide, thermocouple protective jacket, VR 5/20 thermocouple, OPPIR-09 pyrometer, Tamman electrical oven, TVV-2M oven, high-temperature oven

ABSTRACT: A procedure for the production of thermocouple jackets is described. These jackets made of zirconium dioxide and magnesium oxide were up to 600 mm long and 22 mm in diameter. Despite the differences in their compositions, it has not been possible to determine which material is the more advantageous. The tests were carried out in a Tamman electrical oven, a TVV-2M oven, and in high-temperature ovens. It was established that thermocouple coverings described here should not be used under reducing conditions. Tests carried out at 1×10^{-3} mm Hg pressure under argon in a TVV-2M oven showed that the MgO jackets should not be used for

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ACCESSION NR: AP4015329

measuring temperatures in vacuum. When the thermocouples were placed near the water-cooled parts of the oven, their jackets were destroyed by the abrupt temperature differences. The MgO coverings can be used in taking measurements under argon at 2400C for a period of 5 hours, while the ZrO_2 jackets withstand a temperature of 2400C for several minutes and may be used for extended periods at 1900C in vacuum, under nitrogen and under argon. The long coverings had to be attached to graphite supports to prevent their bending at high temperatures. Orig. art. has: 2 tables and 3 figures.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractory Materials)

SUBMITTED: 00 DATE ACQ: 10Feb64 ENCL: 00

SUB CODE: ML NO REF SOV: 003 OTHER: 001

Card 2/2

ACCESSION NR: AP4013186 S/0131/64/000/002/0063/0067

AUTHORS: Margulis, O. M.; Usatikov, I. F.; Kamenetskiy, A. B.

TITLE: Large items of high thermal stability made of zirconium dioxide

SOURCE: Ogneupory*, no. 2, 1964, 63-67

TOPIC TAGS: zirconium dioxide, thermal stability, refractory characteristic, refractory material, refractory shape effect, refractory size effect

ABSTRACT: It was previously established that the thermal stability of refractory materials made of zirconium dioxide increased if certain amounts of isometric and monoclinic ZrO_2 were melted and mixed together. The present work was carried out in order to determine the optimal quantities of the monoclinal part and the optimal grain sizes of both parts. The experiments showed that: 1) thermal stability of large items made of zirconium dioxide increased with the use of 0 to 60 μ fraction of isometric ZrO_2; 2) the monoclinic zirconium (introduced in insignificant quantities) gave best results when its grain sizes were smaller than 2 μ but even with 60 -μ grains its thermal stability and the deformation temperature under load remained satisfactory; 3) 15% of coarse monoclinic zirconium gave the best results

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ACCESSION NR: AP4013186

(the increase of its content from 15 to 25% lowered the strength of the material at room temperature); 4) thermal stability of large items made of zirconium dioxide was affected by the shape and the size of the item; 5) the introduction of the monclinic zirconium considerably increased the thermal stability of large items in comparison to those made only of isometric ZrO_2. Orig. art. has: 4 tables and 1 figure.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute of Refractories)

SUBMITTED: 00	DATE ACQ: 02Mar64	ENCL: 00
SUB CODE: ML	NO REF SOV: 005	OTHER: 000

Card 2/2

ACCESSION NR: AP4042633 S/0131/64/000/007/0329/0332

AUTHOR: Margulis, O. M.; Kamenetskiy, A. B.

TITLE: Use of aluminum phosphate as a binder for refractory corundum products and cements

SOURCE: Ogneupory*, no. 7, 1964, 329-332

TOPIC TAGS: refractory material, aluminum phosphate, corundum, cement, binder, alumina bonding strength, shear strength, firing, phosphorus pentoxide, refractory cement

ABSTRACT: The possible use of aluminum phosphate as a binder for making corundum products, especially parts of thermocouples, and for cementing parts to graphite and to steel was investigated. An aluminophosphate bonding agent with Al_2O_3: P_2O_5=1:3·5, density 1.57 g/cc, was used. Storage in a closed vessel for a month did not affect this binder. The effect of particle size on the stability of the binder was measured with a photoelectric nephelometer. It was found that the filtrate of an aluminophosphate binder contained suspended particles with a size of 370-600 mμ, most of them being 370-420 mμ. An aluminophosphate binder (density 1.58 g/cc, viscosity 7.8 cp) mixed with finely ground alumina in a ratio of 1:1.3 (resulting density = 3.59 g/cc) was then used for cementing samples which were

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ACCESSION NR: AP4042633

fired at 1600C. The tensile strength of the dried samples was 59.5 g/sq.cm. Shear strength data showed that binders based on aluminophosphate cement refractory corundum parts reliably to graphite even after a 15-hour firing in an electric furnace up to 2000C. The effect of an aluminophosphate binder on the properties of corundum samples, using alumina mixed with 1% TiO_2, was also studied and the compressive strength was determined at 300, 1200 and 1600C. Aluminophosphate binders were found to promote sintering, increase the strength after drying and heat-resistance, and did not decrease the temperature of deformation. The increase in heat resistance is associated with a decrease in the thermal expansion coefficient and possibly with the presence of glassy films which absorb the stresses at sharply changing temperatures. Addition of 1% aluminum phosphate to the corundum mass improved sintering, thermal resistance and compressive strength, and decreased the coefficient of thermal expansion with the simultaneous retention of the main properties. The volatility of P_2O_5 does not affect the serviceability of the products and cements. "Microscopic studies were carried out by N. V. Gul'ko." Orig. art. has: 3 tables.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukrainian Scientific Research Institute for Refractory Materials)

SUBMITTED: 00 ENCL: 00

SUB CODE: MT NO REF SOV: 005 OTHER: 017

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L 2595-66 EWT(d)/EWT(l)/EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EWP(i)/EPA(w)-2/EPF(n)-2/
ACCESSION NR: AP5019197 EWP(h)/EWP(b)/EWP(l)/ETC(m) LJP(c) JD/WW/JG/ UR/0115/65/000/006/0019/0023
AT/WH 536.532

AUTHOR: Kamenetskiy, A. B.; Gul'ko, N. V.

TITLE: Interaction between the electrodes in tungsten-rhenium thermocouples with pure-oxide insulation

SOURCE: Izmeritel'naya tekhnika, no. 6, 1965, 19-23

TOPIC TAGS: thermocouple, tungsten rhenium thermocouple

ABSTRACT: The results are reported of an experimental investigation of reactions between W, Mo and these oxides: Al_2O_3, MgO, ZrO_2, $MgAl_2O_4$, $CaZrO_3$, and $SrZrO_3$. Thin powders of 30% metal and 70% oxide compacted into tablets were heated to 1750--2350C and subsequently analyzed by microscopic, x-ray, and chemical methods. Also reactions between the same oxides and VP-5 and VP-10 tungsten-rhenium alloys at 1740--2300C were investigated. It is found that best available insulation for Mo, W, and W-Re electrodes is: (1) Al_2O_3 and $MgAl_2O_4$ for the ceramic-graphite-enclosed thermocouples operating in oxidizing media at temperatures up to 1950C; (2) Beads made from MgO or the above zirconates in reducing CO/CO_2 atmospheres and temperatures up to 2300C; (3) For operating in vacuum (0.013 n/m²), up to 1950C,

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ACCESSION NR: AP5019197

Al_2O_3 and $MgAl_2O_4$; up to 1850C; MgO; up to 2300C, the above zirconates. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: IE, GC

NO REF SOV: 003 OTHER: 001

Card 2/2

MARGULIS, O.M.; KAMENETSKIY, A.B.

Properties of products on a base of aluminum titanate and alumina. Ogneupory 30 no.2:23-27 '65. (MIRA 18:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov.

KAMENETSKIY, A.B.; GUL'KO, N.V.

Interaction of thermoelectrodes of tungsten-rhenium thermocouples insulated with pure oxides. Izm.tekh. no.6:19-23 Je '65. (MIRA 18:8)

KAMENETSKIY, A.V.

Bulk storage and transportation of unrefined sugar in the Cuban Republic. Sakh. prom. 36 no.12:11-14 D '62. (MIRA 16:6)

(Cuba—Sugar—Storage)
(Cuba—Sugar—Transportation)

KAMENETSKIY, A.V.

Manufacture of unrefined sugar in Cuba. Sakh. prom. 37 no.3: 68-74 Mr '63. (MIRA 16:4)

1. Mironovskiy sakharnyy zavod.
(Cuba--Sugar manufacture)

KAMENETSKIY, A.V.

Manufacture of refined sugar in Cuba. Sakh. prom. 37 no.4: 63-66 Ap '63. (MIRA 16:7)

1. Mironovskiy sakharnyy zavod.
(Cuba—Sugar manufacture)

KAMENETSKIY, A.V.

Agricultural maps in an atlas for secondary school teachers. (MLRA 8:10)
Geog.v shkole 18 no.4:77-79 Jl-Ag '55.
(Agriculture--Maps)

KAMENETSKIY, Aleksey Vasil'yevich; SHVETSOV, P.D., prof., retsenzent; SHRDYUK, V.K., inzh., red.

[Operation and repair of reciprocating valve steam engines] Ekspluatatsiia i remont klapannykh parovykh mashin, rabotaiushchikh na protivodavlenie. Kiev, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 108 p. (MIRA 12:7)
(Steam engines--Maintenance and repair)

KAMENETSKIY, A.YE.

11-10-11/23

AUTHOR: Maslakova, N.I. and Kamenetskiy, A.Ye.

TITLE: New Data on Upper Cretaceous Deposits of the Crimean Steppe (Novyye dannyye o verkhnemelovykh otlozheniyakh stepnogo Kryma)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1957, # 10, p 97-99 (USSR)

ABSTRACT: As a result of extensive studies of drill holes, more complete data were obtained on Upper Cretaceous deposits of the western areas of the Crimean steppe. The Upper Cretaceous deposits consist mainly of layers of light greyish marls, limestones and clays, whereby the thickness of the layers varies from 25 to 600 m. Based on studies of small foraminifera, analogy of all strata of the Upper Cretaceous period was determined. The author examined the deposits of various geologic strata, such as the Turonian and Campanian stages, the Santonian substage as well as the Maastricht and Danish deposits. The available data disclose that during the Upper Cretaceous period the examined territory presents an area of uneven accumulation of sediments. The area of the present Tarkhankutskiy peninsula which has a thick, uninterrupted Upper Cretaceous strata experienced a most intense bending.
There are 2 references, both Slavic (Russian).

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New Data on Upper Cretaceous Deposits of the Crimean Steppe 11-10-11/23

ASSOCIATION: Moscow State University imeni M.V. Lomonosov; All-Union Scientific Research Oil Institute, Moscow (Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova, Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy institut, Moskva)

SUBMITTED: 3 September 1956

AVAILABLE: Library of Congress

Card 2/2

BURSHTAR, Mikhail Samuilovich; Prinimali uchastiye: ZAKHAROV, Ye.V., geolog; KAMENETSKIY, A.Ye., geolog. KHAIN, V.Ye., prof., doktor geologo-mineral.nauk, red.; DOLMATOV, P.S., vedushchiy red.; FRUMKIN, P.S., tekhn.red.

[Geology, and oil and gas potentials of platform provinces in Ciscaucasia and the Crimea] Geologiia i neftegazonosnost' platformennykh oblastei Predkavkaz'ia i Kryma. Pod red. V.E. Khaina. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1960. 214 p.
(MIRA 13:11)

(Crimea--Petroleum geology) (Crimea--Gas, Natural--Geology)
(Caucasus, Northern--Petroleum geology)
(Caucasus, Northern--Gas, Natural--Geology)

SHCHERBA, G.V.; KAMENETSKIY, A.Ye.

Basic characteristics of geological development in the Crimea.
Trudy VNIIGNZ no. 25:14-30 '66. (MIRA 18:12)

BURSHTAR, M.S.; KAMENETSKIY, A.Ye.

New data on the geology and oil and gas potentials of the central and western parts of the Crimean steppes. Sov.geol. 5 no.1: 82-92 Ja '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Crimea--Petroleum geology)
(Crimea--Gas, Natural--Geology)

KAMENETSKIY, A.Ye.

Tectonics of the Crimean plain. Trudy VNIGNI no.38[illegible]

Lower Cretaceous sediments of the Crimean plain. Izv.[illegible]
(MIRA 17:6)

BURSHTAR, M.S.; MASHKOV, I.V.; KAMENETSKIY, A.Ye.

Conditions determining the formation of oil and gas pools in the Tarkhankut Peninsula. Geol. nefti i gaza 6 no.6:33-37 Je '62. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Tarkhankut Peninsula--Petroleum geology)
(Tarkhankut Peninsula--Gas, Natural--Geology)

KAMENETSKIY, Boris Iosifovich; KOSHKIN, Ivan Gavrilovich; IVANOV, S.S., red.; GALAKTIONOVA, Ye.N., tekhn.red.

[Handbook for project work for course credit in the organization of road construction] Posobie po kursovomu proektirovaniiu organizatsii stroitel'stva dorog. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1960. 167 p. (MIRA 14:3)

(Road construction--Study and teaching)

KAMENETSKIY, B. G., Engineer

"Investigation of the Elements of Contactless Electric Mine Transport on Direct Current of Increased Frequency." Sub 28 Jun 51, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

KRICHKO, Anatoliy Ivanovich; KAMENETSKIY,B.G., redaktor; VORONIN,K.P., tekhnicheskiy redaktor

[Electric traction equipment] Tiagovaia elektroapparatura. Moskva, Gos. energ.izd-vo, 1956. 408 p. (MIRA 9:4)
(Electric locomotives)

KAMENETSKIY, B.G.

621.332.43 : 622

3804. NON-CONTACT ELECTRIC LOCOMOTIVE TRACTION FOR MINES. N.A.Staroskol'skii, F.I.Bakhmutskii, B.G.Kamenetskii and V.E.Rozenfel'd.
Elektrichestvo, 1956, No. 4, 28-31. In Russian.

Since the first narrow-gauge non contact electric locomotive operating at 2500 c/s was put on the rails, development work on the system has produced fully satisfactory results in so far as this kind of traction is now technically and economically superior to traction by battery locomotives. Where full compliance with the existing safety regulations in mines is concerned, further improvements were suggested. Up to now the low operating voltage (40 V) makes the system reasonably safe against spark production, heating up of metal objects by induction effects or unintentional firing of shot

U. F. Kraus

Moscow Power Engineering Inst. im. Molotov.

KAMENETSKIY B.G.

SHISHKIN, Kirill Aleksandrovich, prof.; GUREVICH, Abram Natanovich, kand. tekhn.nauk; STEPANOV, Aleksandr Dmitriyevich, kand.tekhn.nauk; VASIL'YEV, Vladimir Andreyevich, inzh.; SAZONOV, A.G., inzh., red.; KAMENETSKIY, B.G., kand.tekhn.nauk, red.; KHITROV, P.A., tekhn.red.

[TE 3 diesel locomotive] Teplovoz TE 3. Moskva, Gos. transp.zhel. dor. izd-vo, 1957. 376 p. (MIRA 11:4)
(Diesel locomotives)

KAMENETSKIY, B.G.

STEPANOV, Aleksandr Dmitriyevich; DIMITRADZE, A.S., doktro tekhn.nauk, prof., retsenzent; KAMENETSKIY, B.G., kand.tekhn.nauk, red.; EL'KIND, V.D., tekhn.red.

[Ways of increasing transmission efficiency in diesel and gas-turbine locomotives] Puti povysheniia effektivnosti peredachi teplovozov i gazoturgovozov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 127 p. (MIRA 11:5)
(Locomotives)

KAMENETSKIY, B.G., kandidat tekhnicheskikh nauk; RADIN, S.Ye., kandidat tekhnicheskikh nauk.

Shortcomings in the automatic control circuit of the TE3 diesel locomotive. Elek. i tepl. tiaga no.4:41-43 Ap '57. (MLRA 10:6)
(Diesel locomotives)

STAROSKOL'SKIY, N.A., kand.tekhn.nauk; KAMENETSKIY, B.G., kand.tekhn.nauk

Operating conditions of traction substations in contactless electric transportation. Sbor.DonUGI no.17:86-91 '58.
(MIRA 12:5)

(Mine railroads) (Electric substations)

STEPANOV, Aleksandr Dmitriyevich; EZRIN, Grigoriy Semenovich; VERKHOGLYAD, Vasiliy Yefremovich; KUZNETSOV, Boris Georgiyevich; TRAKHTMAN, L.M., kand.tekhn.nauk, retsenzent; KAMENETSKIY, B.G., kand.tekhn. nauk, red.; NIKITIN, A.G., red.izd-va; MODEL', B.I., tekhn.red.

[Electric drive of diesel locomotives] Elektricheskaia peredacha teplovozov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1959. 292 p. (MIRA 12:8)
(Diesel locomotives) (Electric driving)

SOV/110-59-8-15/24

AUTHOR: Kamenetskiy, B.G., Candidate of Technical Sciences.

TITLE: The Potential-Distribution on the Commutator of a d.c. Machine with a Multiplex Winding.

PERIODICAL: Vestnik elektropromyshlennosti 1959, Nr 8, pp 63-66 (USSR)

ABSTRACT: Multiplex windings are becoming widely used in large d.c. machines, for example in generators for diesel-electric locomotives which are being built in outputs up to about 3000 kW. In such machines it is most important that the maximum voltage between commutator bars should not be excessive. Multiplex windings should have equalising connections of the second order to equalise the distribution of load between the parallel paths of the winding and also the voltage distribution over the commutator. The second-order equalising connections interconnect points on different parallel branches that should be at the same potential. Little work has been published on the commutator voltage-distribution in machines with multiplex windings of the following types:
(a) multiplex lap windings with equalisers on only one

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The Potential-Distribution on the Commutator of a d.c. Machine with a Multiplex Winding.

side of the armature;
(b) multiplex wave windings in which the coil span is greater than the pole pitch, with equalisers located on only one side of the armature
(c) multiplex lap frog-leg windings.
It is usually considered that in case (a) equalisers on one side of the armature serve simultaneously as first-and second-order equalisers. However, careful consideration of the winding diagram shown in Fig 1 shows that in fact the functions of the second-order equaliser are not completely fulfilled in this case. It is stated that there is a displacement between the potential diagrams of neighbouring branches of the winding, due to the toothed construction of the armature and the trapezoidal shape of the magnetic induction curve in the air gap. Accordingly, equaliser connections between commutator bars two pole-pitches apart cannot equalise the potential distribution over the commutator. In case (b) equaliser connections on one side of the armature cannot interconnect parallel branches

connected to adjacent commutator bars; this is explained with reference to Fig 2. Accordingly parallel branches connected to adjacent bars may have displaced potential diagrams, just as in the previous case. Case (c) is considered with reference to Fig 3 and here too there is no direct relationship between the potential on adjacent bars. Thus, in all the above three cases the potential distribution round the commutator may be incorrect. In order to verify these theoretical considerations oscillograms were made of the voltages between bars on an unloaded locomotive generator type MPT99/47 with a frog-leg armature winding based on a duplex lap. Three special contact rings were fitted, each connected to a commutator bar. An oscillogram of the voltage between bars connected to the ends of one section of the lap winding is shown in Fig 4a. The curve corresponds to the curve of magnetic induction in the air gap and there are no pulsations. An oscillogram for two neighbouring bars is shown in Fig 4b and it will be seen that there are high-frequency pulsations with an amplitude

The Potential-Distribution on the Commutator of a d.c. Machine with a Multiplex Winding.

about 20% of the fundamental amplitude. These pulsations may give rise to bad commutation if the voltage between bars reaches 34V even for a very short time It is concluded that in calculating the maximum voltage between bars for machines with windings of the types considered, allowance should be made for the incorrect potential distribution on the commutator. The permissible mean voltages between bars for machines with these types of winding should be 15 to 20% less than the normal standards. There are 4 figures, and 4 Soviet references.

SUBMITTED: January 23, 1959.

KAMENETSKIY, B.G., kand.tekhn.nauk; GORBATYUK, V.A., inzh.

Improvement in the utilization of the power of TE3 diesel locomotives at high velocities. Elek.i tepl.tiaga 3 no.9: 23-25 S '59. (MIRA 13:2)
(Diesel locomotives)

KAMENETSKIY, Boris Grigor'yevich, kand.tekhn.nauk; NEMUKHIN, V.P., kand.tekhn.nauk, red.; BOKROVA, Ye.N., tekhn.red.

[Circuits and characteristics of the electric transmission systems of diesel locomotives] Skhemy i kharakteristiki teplovoznykh elektricheskikh peredach. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 83 p. (MIRA 14:4)

(Diesel locomotives)

KAMENETSKIY, B.G., kand.tekhn.nauk

Selecting the regulation limits for electric transmission elements of diesel locomotives. Vest.TSNII MPS 19 no.2:14-19 '60. (MIRA 13:6)
(Diesel locomotives)

EZRIN, Grigoriy Semenovich, inzh.; BUDNITSKIY, Abram Arkad'yevich, inzh.; KAMENETSKIY, B.G., kand. tekhn. nauk, red.; VOROB'YEVA, L.V., tekhn. red.

[Electric circuit of the TE3 diesel locomotive] Elektricheskaia skhema teplovoza TE3. Izd.2. Moskva, Transzheldorizdat, 1962. 57 p. (MIRA 15:6)

(Diesel locomotives)

PLATONOV, Ye.V., kand.tekhn.nauk; NIKUSHIN, A.I., inzh.; KAMENETSKIY, B.G., kand.tekhn.nauk.; FILIPPOV, L.K., inzh.; STEPANOV, A.D., doktor tekhn.nauk, retsenzent; PETUSHKOVA, I.K., inzh., red.; BOBROVA, Ye.N., tekhn.red.

[Results of the studies of electric power transmission systems on diesel locomotives] Rezul'taty issledovaniia elektricheskikh peredach teplovozov. Moskva, Vses.izd-vo poligr. ob"deinenie M-va putei soob., 1961. 120 p. (Moscow. Vsesoiyznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.213) (MIRA 14:9)

(Diesel locomotives)

KAMENETSKIY, B.G., kand.tekhn.nauk (Moskva)

Parameters of limited use of d.c. traction motors. Elektrichestvo no.7:56-60 Jl '63. (MIRA 16:9)
(Electric railway motors)

STEPANOV, A.D.;KAMENETSKIY, B.G., kand. tekhn. nauk, retsenzent;
GALANOVA, M.S., inzh., red.

[Automatic power control for diesel and gas-turbine locomotives] Avtomaticheskoe regulirovanie moshchnosti v teplovozakh i gazoturbovozakh. Moskva, Izd-vo "Mashinostroenie," 1964. 298 p. (MIRA 17:7)

KAMENETSKIY, B.I.

Experience in the treatment of spinal impotence with novocaine in association with stimulating substances. Urologiia 28 no.5: 65-67 S-O '63 (MIRA 17:4)

1. Iz Gorodskogo kozhno-venerologicheskogo dispansera, Riga.

KAMENETSKIY, B.L., inzh.; SOKOLIN, Sh.L., inzh.

Control of pump delivery. Mekh. i avtom. proizv. 17 no.8: 9-11 Ag '63. (MIRA 16:10)

KAPLAN, S.A., doktor fiz.-mat. nauk, red.; KIRKO, I.M., doktor fiz.-mat. nauk, red.; STANYUKOVICH, K.P., doktor fiz.-mat. nauk, red.; SHIROKOV, M.F., doktor fiz.-mat. nauk, red.; FRANK-KAMENETSKIY, D.A., doktor fiz.-mat. nauk, red.; VENGRANOVICH, A., red.; LEMBERG, A., tekhn. red.

[Problems of magnetohydrodynamics and plasma dynamics; reports] Voprosy magnitnoi gidrodinamiki i dinamiki plazmy; doklady. Riga, Izd-vo Akad. nauk Latviiskoi SSR. Vol.2. 1962. 660 p. (MIRA 15:12)

1. Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 2d, Riga, 1960.

(Magnetohydrodynamics) (Plasma (Ionized gases))

AUTHOR: Kamenetskiy, F.M., Kaufman, A.A., and Yakubovskiy, Yu.V.

TITLE: On the selection of optimum frequencies in induction methods of electric prospecting. (O vybore optimal'noy chastoty pri induktivnykh metodakh elektrorazvedki).

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1957, No.2, pp. 200 - 210. (U.S.S.R.)

ABSTRACT: Investigation of the frequency behavior mechanism in an a.c. magnetic field in the presence of conductors of simple geometric configuration, such as, a sphere, a cylinder and a disc. The problem is solved through theoretical calculation and model tests. Since the complex resistance of a three dimensional conductor inside a magnetic field is dependent on frequency the amplitude of the anomalous field in the case of increase in the frequency approaches asymptotically its maximum value; the phase anomaly increases at first with increasing frequency and then drops to zero.

TITLE: On the selection of optimum frequencies in induction methods of electric prospecting. (O vybore optimal'noy chastoty pri induktivnykh metodakh elektrorazvedki).

In studying objects with a given specific resistance, dimensions and depths of location, it is always possible to select an optimum frequency at which the amplitude and phase anomalies caused by the studied object will be highest; an increase in the frequency above the optimum may lead to a slight increase in the amplitude anomaly, but the phase anomaly will be smaller. Preliminary calculations indicate that for real conditions the optimum frequencies will change from a few dozen to a few thousand c.p.s. for most highly conductive ores. It is necessary to investigate the possibility of selecting frequencies at which the ratio of amplitude and phase anomalies caused by the conductor deposit at a depth will differ from the ratio of the amplitude and phase anomalies produced by conductors at the surface.

TITLE: On the selection of optimum frequencies in induction methods of electric prospecting. (O vybore optimal'noy chastoty pri induktivnykh metodakh elektrorazvedki).

Thus it would be possible to separate anomalies which are located at great depths and are of greatest interest from the geological point of view from numerous other anomalies. The text includes 10 graphs, 2 diagrams, 1 table and about 2 pages of equations.

There are 7 references of which 5 are Slavic

ASSOCIATION: Moscow Geological Survey Institute. (Moskovskiy geologo-pazvedochnyy institut)

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SUBMITTED: 4/10/56

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KAMENETSKIY, F. M., Candidate of Tech Sci (diss) -- "The development of low-frequency inductive methods of electrical prospecting for ore deposits, as applied to the physico-geological conditions of the Caucasus Mountains". Moscow, 1959. 15 pp (Min Higher Educ USSR, Moscow Geological-Prospecting Inst im S. Ordzhonikidze), 110 copies (KL, No 20, 1959, 112)

KAMENETSKIY, F.M.; KOVALENKO, V.F.; YAKUBOVSKIY, Yu. V.

Two-frequency induction electric logging. Izv. vys. ucheb. zav.; geol. i razv.; 2 no.7:99-107 Jl '59 (MIRA 13:3)

1. Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze.
(Electric prospecting)

KAMENETSKIY, F.M.; KAUFMAN, A.A.; YAKUBOVSKIY, Yu.V.

Inductive methods in electric prospecting for ores. Trudy MGRI 36:32-46 '59. (MIRA 15:5)
(Electromagnetic prospecting)

KAMENETSKIY, F.M.; KOVALENKO, V.F.

Evaluation of the duration of primary field impulses during excitation of nonstationary eddy currents in prospecting for highly conductive ores. Izv. vys. ucheb. zav.; geol. i razv. 3 no.6:92-94 Je '60. (MIRA 14:7)

1. Moskovskiy geologorazvedochnyy institut imeni S. Ordzhonikidze.
(Electric prospecting) (Ore deposits)

BEZRUK, I.A.; KAMENETSKIY, F.M.

Interpretation of data on multifrequency induction prospecting in regions of blanket sediments of low resistance. Izv. vys. ucheb. zav.; geol. i razved. 3 no. 10:93-101 O '60. (MIRA 13:12)

1. Moskovskiy geologorazvedochnyy institut imeni S. Ordzhonikidze.
(Electric prospecting)

S/169/62/000/007/074/149
D228/D307

AUTHORS: Kamenetskiy, F. M. and Kovalenko, V. F.

TITLE: Quick-acting contactor to an electric prospecting station for operations by the method of transients

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 33, abstract 7A216 (V sb. Razved. i promysl. geofiz., no. 42, M., 1961, 48-54)

TEXT: The rate of breaking the current in the loop is of great significance in investigations of ore deposits by the method of field formation. The authors suggest that the electromechanical switch controlled by the relay unit should be modernized in order to increase the contactor's operating rate when the currents are high (50 amperes). The modernized switch's main features are the increased track over which the movable contacts run and the elimination of the antagonistic clamp springs. The suggested device accelerates the process of breaking the current in the circuit by ~3 times. [Abstracter's note: Complete translation.]

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S/169/63/000/001/057/062
D218/D307

AUTHORS: Kamenetskiy, F.M. and Kovalenko, V.C.

TITLE: Nonsteady eddy currents in conducting covering deposits

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1963, 30, abstract 1D167 (Izv. vyssh. uchebn. zavedeniy. Geol. i razvedka, 1962, no. 4, 105-112)

TEXT: In order to estimate the effect of conducting covering deposits on the results of electrical logging involving the observation of transients (a modification of inductive electrical logging), an analysis was made of eddy currents induced in an infinite plate by a loop and an infinitely long cable. A theoretical calculation was completed and experiments were carried out on models. It was found that 5-6 msec after a step change in the primary field, the magnetic field due to the eddy currents reached ~1% of its maximum value, i.e. practically disappeared.
[Abstracter's note: Complete translation]

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S/169/63/000/002/114/127
D263/D307

AUTHORS: Kamenetskiy, F. M., Kovalenko, V. F.

TITLE: Some results of testing of the transient processes method (TPM)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 31, abstract 2D185 (Razvedka i okhrana nedr, 1962, no. 7, 35-38)

TEXT: A brief characteristic of the TPM is given, together with a description of its advantages over other electric prospecting methods in the search for well conducting ores. The main advantages of TPM are (1) recording of only the anomalous component of the field, (2) possibility of conducting the work in regions where the covering layers are thick and well conducting, (3) closer relationship between anomalous effects connected with well conducting ore deposits and caused by nonuniformities in covering layers and the surrounding rocks. It is shown that the possibilities of TPM w.r.t.

Some results of testing ...

resolution of anomalies caused by good and bad conductors are theoretically unlimited; in practice the method is limited by sensitivity of the recording apparatus, since fairly high ratios are reached at later times of the transient process, when the anomalous effects are negligible. Results are quoted of a trial of the method on one of the pyritic deposits of South Ural. The studied lenticular deposit was at a depth of 50 - 70 m, was ~250 m across and, on the average, ~12 m thick. The surrounding rocks were effusive quartzic keratophyres and their tufas. Field measurements were made with a model of the instrument. developed at MGRI. which allowed

able reduction of the influence of nonuniformities in enclosing

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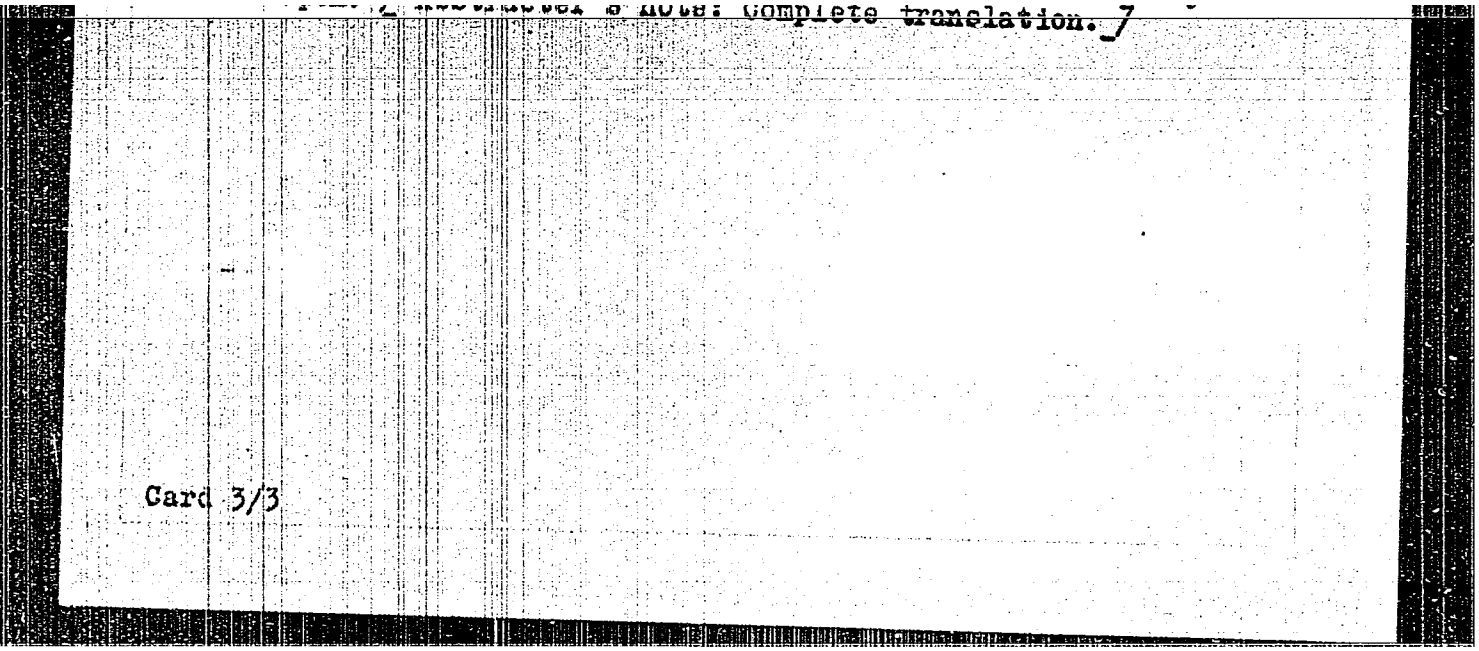
S/169/63/000/002/114/127
D263/D307

Some results of testing ...

rocks, and increases the depth to which the search is made. The example shows also the necessity of recording the earlier stages of the process in the case of geological



KAMENETSKIY, F.M.

Measurement possibilities with the heop of combined contours in electric prospecting by field location. Geofiz. razved. no.12:62-73 '63. (MIRA 16:11)

KAMENETSKIY, F.M.; KOVALENKO, V.F.

High-speed contactor for an electric prospecting station, performing according to the method of transient processes. Razved. i prom. geofiz. no.42:48-54 '61. (MIRA 16:11)

KAMENETSKIY, F.M.; KOVALENKO, V.F.

Suppressing the noise of a commercial frequency when recording nonstationary electromagnetic fields. Razved. i prom. geofiz. no.51:102-106 '64. (MIRA 17:11)

ACC NR: AT6020472 (A) SOURCE CODE: UR/0000/65/000/000/0059/0068

AUTHOR: Kamenetskiy, F. M. (Moscow); Timofeyev, V. M. (Moscow)

ORG: none

TITLE: The effect of the shape of the excitation pulse on the results observed in prospecting for highly conductive ores by the field stabilization method

SOURCE: AN UkrSSR. Teoriya i elementy sistem otbora geofizicheskoy informatsii (Theory and elements of systems for selecting geophysical information). Kiev, Naukova dumka, 1965, 59-68

TOPIC TAGS: prospecting, pulse shape, pulse duration modulation

ABSTRACT: The authors describe the effect of signal duration and shape upon the resolution quality of this method. Such seemingly instantaneous changes of the field as are caused, e. g., by switching the current off and on are actually long enough to permit the development of a complex series of events. The authors conclude that to eliminate the transient process due to switching the current off, the signal should be much shorter in duration--not over 0.4-0.6 msec. In addition, the contact transmitting the pulse should be rectangular and it should fit a #2 size opening. Orig. art. has: 34 formulas.

SUB CODE: 08/ SUBM DATE: 10Nov65/ ORIG REF: 001/ OTH REF: 002

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